

STEREO POWER AMPLIFIER

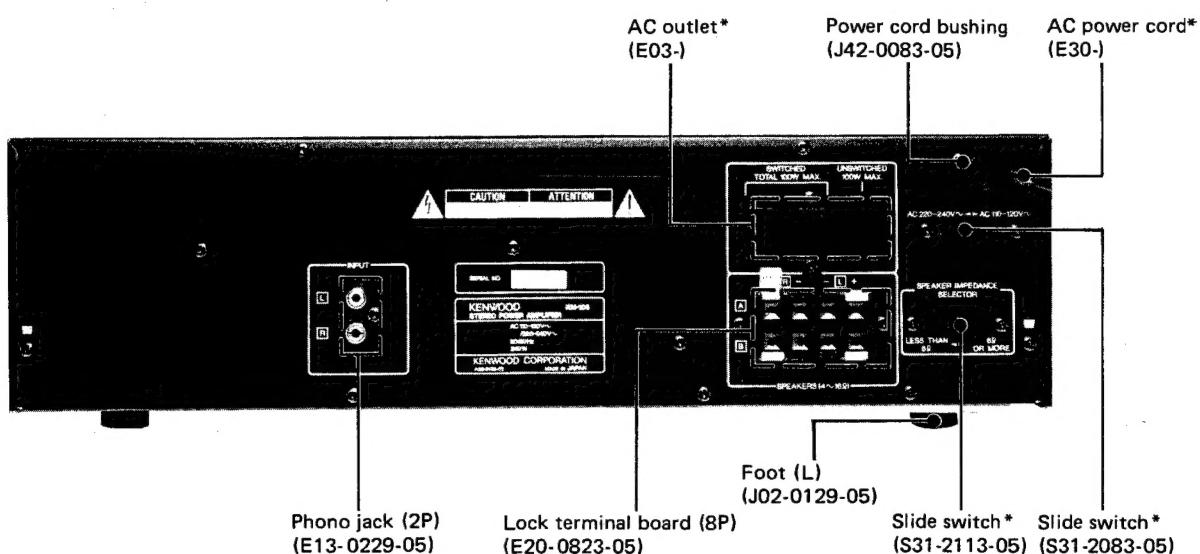
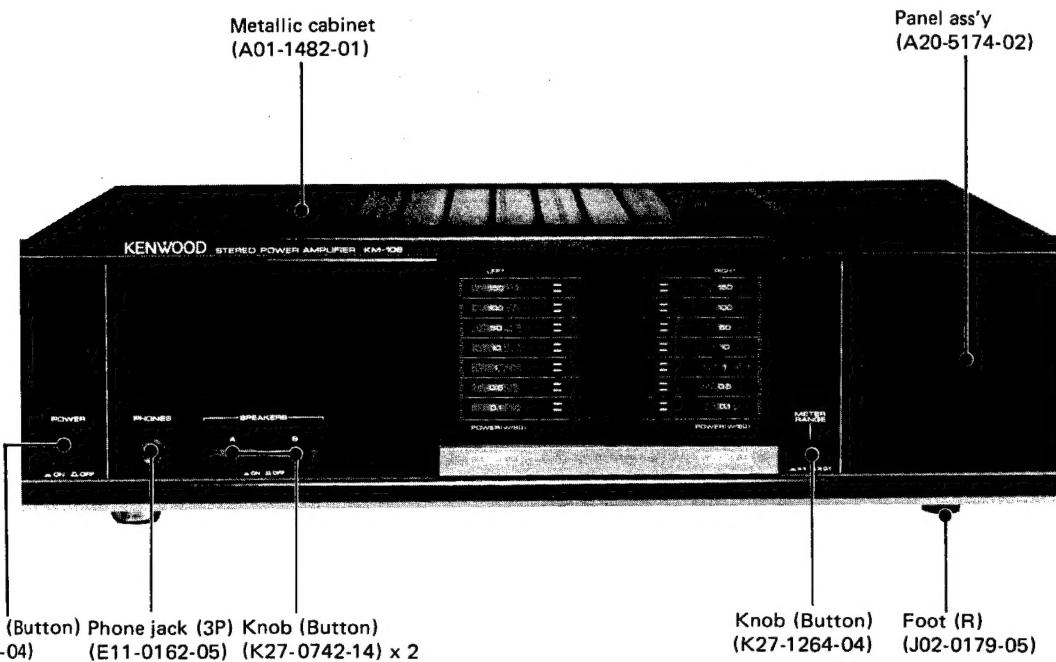
KM-106

SERVICE MANUAL

KENWOOD

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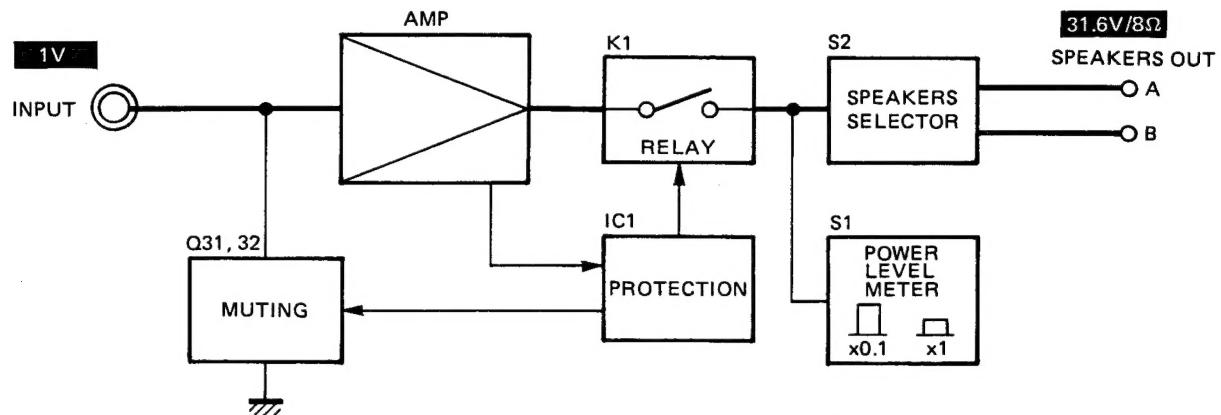


*Refer to parts list on page 10.

Note : Specifications is written on page 4.

BLOCK DIAGRAM/CIRCUIT DESCRIPTION

BLOCK LEVEL DIAGRAM



CIRCUIT DESCRIPTION

Description of Components

POWER AMPLIFIER (X07-227X-XX)

Components	Application/function	Operation/condition/compatibility
Q1~4	Initial stage differential amplifier	Low noise.
Q5~8	2nd stage differential amplifier	
Q9, 10	3rd stage amplifier	Class A cascade current amplifier.
Q11, 12	3rd stage amplifier	Class A cascade voltage amplifier.
Q13, 14	Bias temperature compensation	
Q15~18	Class B driver	
Q19~22	Power amplifier	
Q23~30	Current protection	
Q31, 32	Input muting	
Q33	Relay driver IC	Current protection.
Q34	Constant voltage control	
Q35, 36	Muting driver	
Q37~40	LED driver	

KM-106 KM-106

ADJUSTMENT/REGLAGE/ABGLEICH

ADJUSTMENT

No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	AMPLIFIER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
1	IDLE CURRENT	-	Connect a DC voltmeter across CPI (L) CP2 (R)	VOLUME: 0	VR1 (L) VR2 (R)	9~18mV	(a)

REGLAGE

N°	ITEM	REGLAGE DE L'ENTREE	REGLAGE DE LA SORTIE	REGLAGE DE L'AMPLIFICATEUR	POINTS L'ALIGNEMENT	ALIGNER POUR	FIG.
1	COURANT DE POLARISATION	-	Connecter un voltmètre de CC sur CPI (G) CP2 (D)	VOLUME: 0	VR1 (G) VR2 (D)	9~18mV	(a)

ABGLEICH

NR.	GEGENSTAND	EINGANGS-EINSTELLUNG	AUSGANGS-EINSTELLUNG	VORSTARKER-EINSTELLUNG	ABGLEICH-PUNKTE	ABGLEICHEN FÜR	ABB.
1	LEERLAUFSTROM	-	Einen Gleichspannungsmesser über CPI (L) CP2 (R) anschließen.	VOLUME: 0	VR1 (L) VR2 (R)	9~18mV	(a)

SPECIFICATIONS

Rated Power Output

125 watts per channel minimum RMS, both channels driven, at 8 ohms from 20 Hz to 20,000 Hz with no more than 0.03% total harmonic distortion.

Both channels driven (Except U.S.A. and Canada)
(8 ohms, 1 kHz).....135 W + 135 W
(4 ohms, 1 kHz).....110 W + 110 W

Music Power Output (8 ohms)
(Except USA and Canada).....250 W + 250 W

Total Harmonic Distortion
20 Hz to 20,000 Hz.....0.03% at rated power into 8 ohms
0.015% at 1/2 rated power into 8 ohms

1 kHz.....0.002% at 1/2 rated power into 8 ohms

Intermodulation Distortion
(60 Hz:7 kHz = 4:1).....0.002% at rated power into 8 ohms

Frequency Response.....5 Hz to 200 kHz, +0, -3 dB

Power Bandwidth
(0.2 % THD, 8 ohms).....10 Hz to 50 kHz

Signal-to-Noise Ratio.....120 dB

Damping Factor.....35 at 50 Hz

General

Power Consumption.....4 A (USA and Canada)
240 W (Others)

AC Outlets.....Switched 2, Unswitched 1
(Except some area)

Dimensions.....W 420 mm (16-9/16")
H 123 mm (4-13/16")
D 269 mm (10-9/16")

Weight (Net).....7.9 kg (17.4 lb)

Note :

We follow a policy of continuous advancements in developments.
For this reason specifications may be changed without notice.

PC BOARD

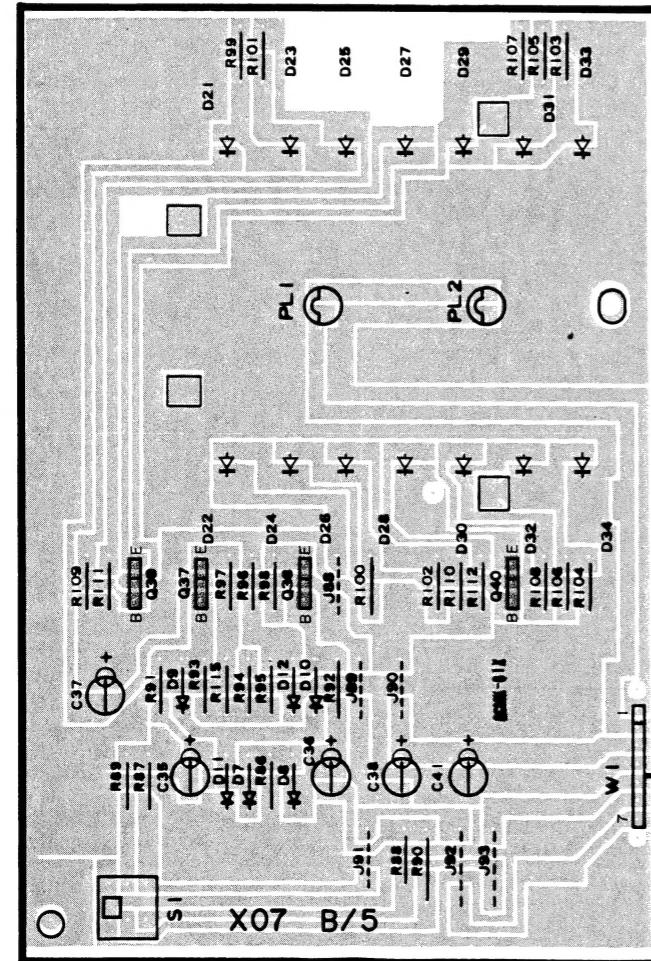
(X07-2270-10)

	B	C	E
Q5,Q7	-	-	17V
Q17,Q18	-	-68V	-
Q21,Q22	-	-68V	-
Q34	-	34V	23.4V

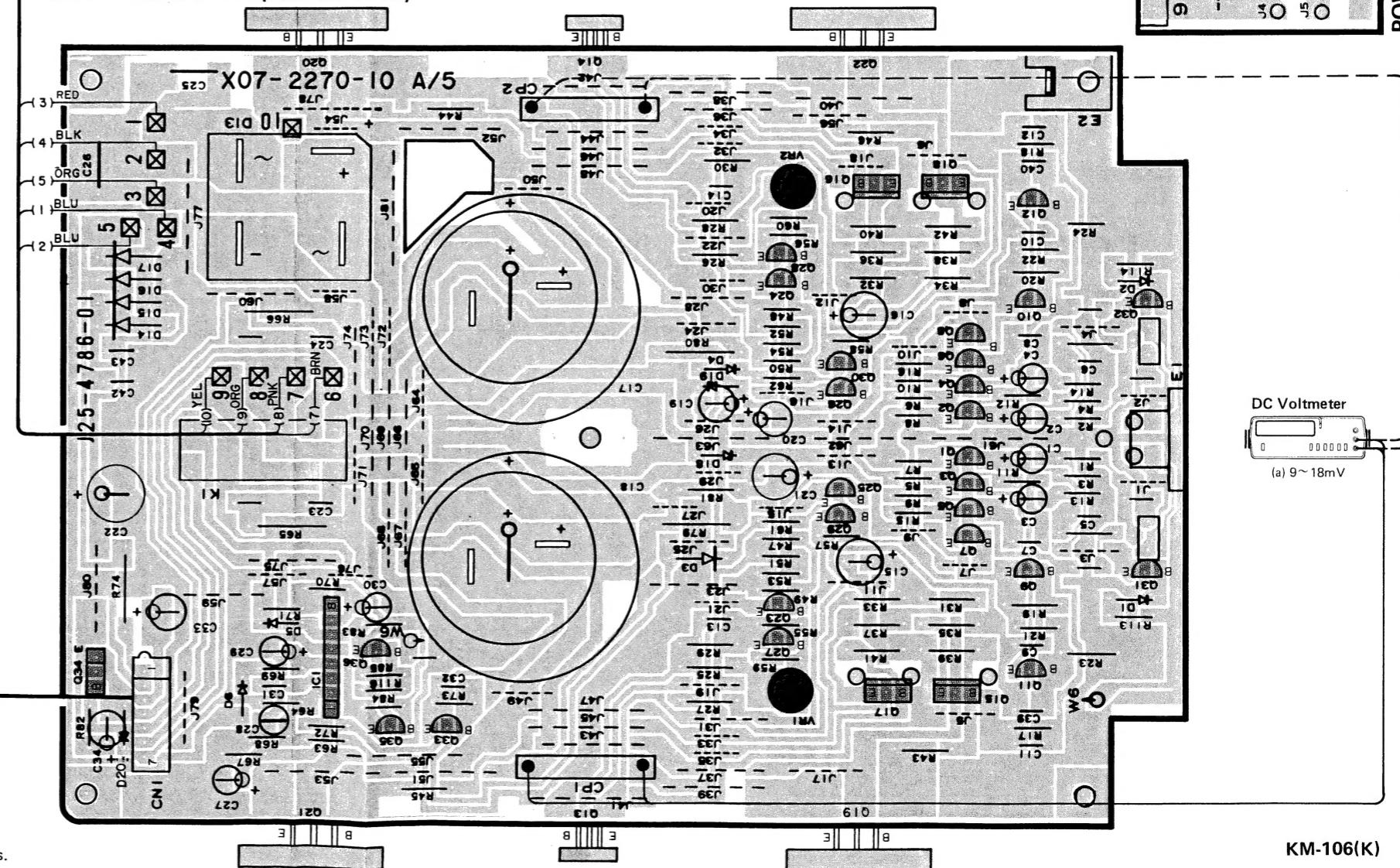
FRONT

IC1

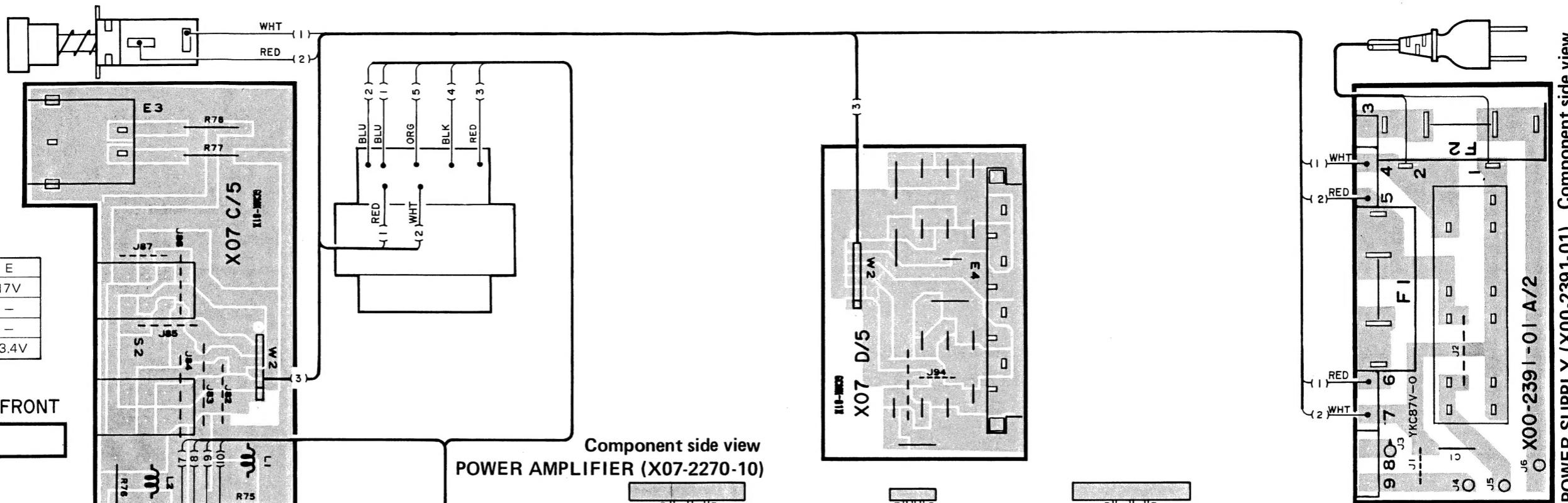
4	2.7V
7	2.2V
8	3.2V



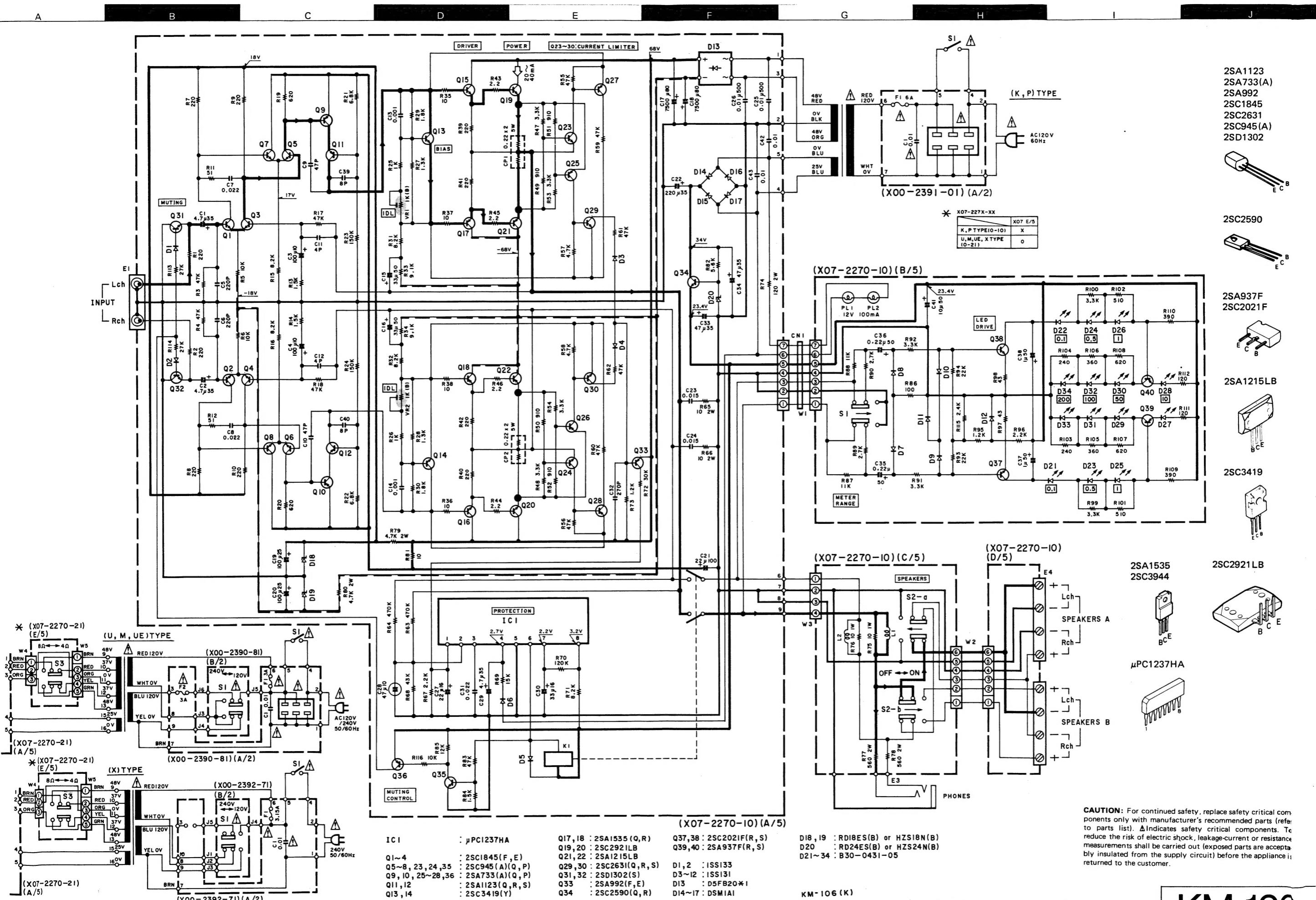
Component side view
POWER AMPLIFIER (X07-2270-10)



Refer to the schematic diagram for the values of resistors and capacitors.

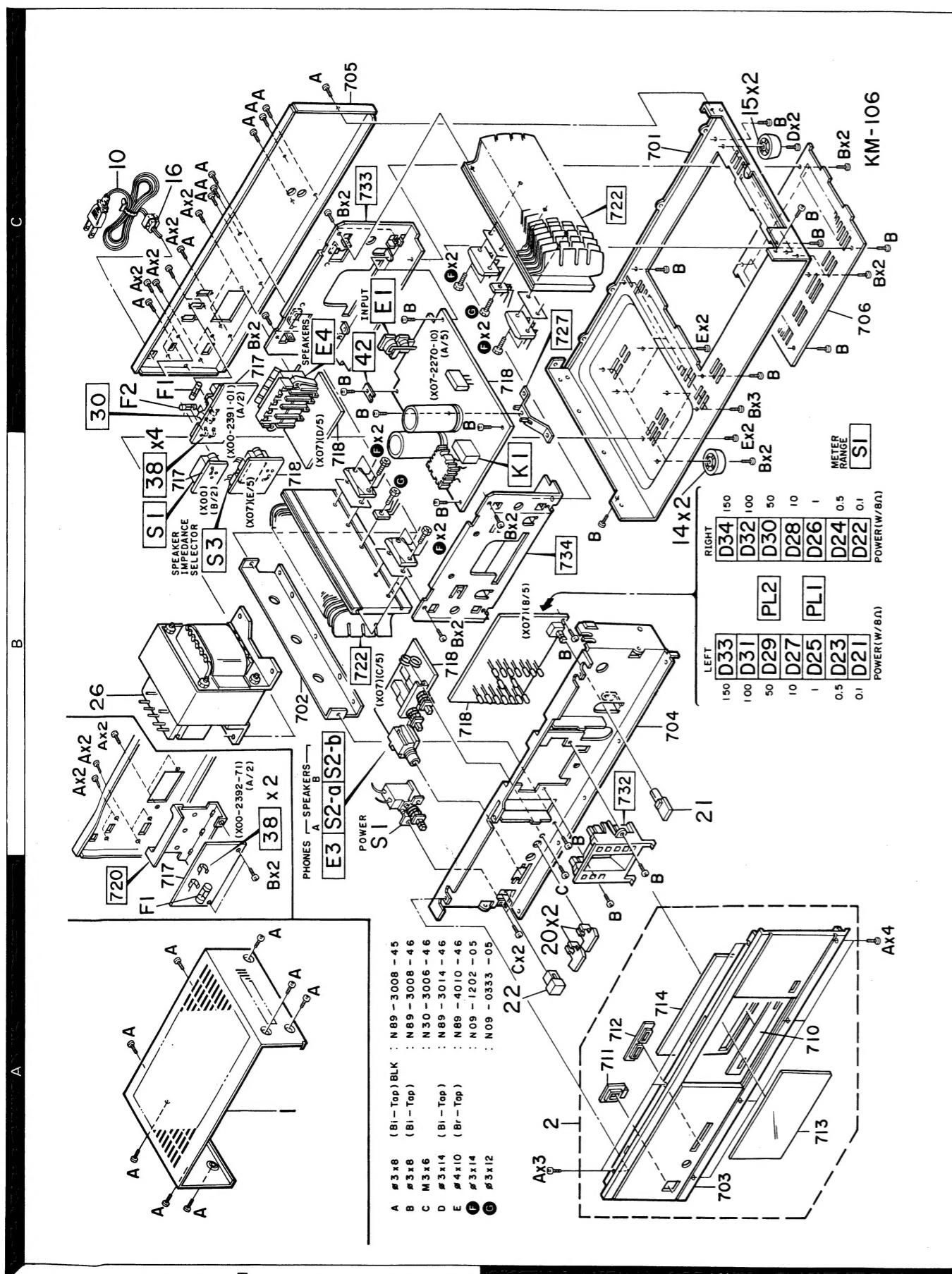


POWER SUPPLY (X00-2391-01) Component side view



KM-106 KM-106

EXPLODED VIEW



Parts with the exploded numbers larger than 700 are not supplied.

PARTS LIST

* New Parts

Parts without Parts No. are not supplied

Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.

Telle ohne Parts No. werden nicht geliefer

Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規 格			Desti- nation 仕 向	Re- mark 備考
KM-106								
1 2	1A 2A	*	A01-1482-01 A20-5174-02	METALLIC CABINET PANEL ASSY				
-			B46-0092-03	WARRANTY CARD			K	
-			B46-0094-03	WARRANTY CARD			UUE	
-			B46-0095-03	WARRANTY CARD			UUE	
-			B46-0096-13	WARRANTY CARD			X	
-			B46-0121-03	WARRANTY CARD			P	
-		*	B50-6831-00	INSTRUCTION MANUAL(ENGLISH)				
-		*	B50-6832-00	INSTRUCTION MANUAL(FRENCH)			PMX	
-		*	B50-6833-00	INSTRUCTION MANUAL(SPANISH)			M	
-		*	B50-6834-00	INSTRUCTION MANUAL(ARABIC)			M	
-			B58-0223-04	CAUTION CARD (PRE-SET 120V)			U	
-			B58-0269-04	CAUTION CARD			K	
-			B58-0513-04	CAUTION CARD (PRESET220-240)			UE	
-			B59-0092-00	SERVICE DIRECTORY			UUE	
▲ 10	1C		E30-0812-05	AC POWER CORD			UMUE	
▲ 10	1C		E30-0974-05	AC POWER CORD			KP	
▲ 10	1C		E30-1341-05	AC POWER CORD			X	
▲ F1	1C		F05-3121-05	FUSE (SEMKO) (250V T3, 15A)			X	
▲ F1	1C		F05-6027-05	FUSE (UL) (250V 6A)			KP	
▲ F1 ,2	1A		F05-3022-05	FUSE (250V 3A)			UMUE	
-		*	H01-7565-04	ITEM CARTON CASE				
-			H10-1892-02	POLYSTYRENE FOAMED FIXTURE				
-			H10-1893-02	POLYSTYRENE FOAMED FIXTURE				
-			H25-0223-04	PROTECTION BAG (750X350X0.03)				
-			H25-0232-04	PROTECTION BAG (235X350X0.03)				
▲ 14	2B		J02-0129-05	FOOT (L)				
▲ 15	2C		J02-0179-05	FOOT (R)				
▲ 16	1C		J42-0083-05	POWER CORD BUSHING				
-			J61-0307-05	WIRE BAND				
20	2A		K27-0742-14	KNOB (BUTTON) SPEAKERS				
21	2B		K27-1264-04	KNOB (BUTTON) METER RANGE				
22	2A		K29-2001-04	KNOB ASSY(BUTTON)POWER				
▲ 26	1B	*	L01-7911-05	POWER TRANSFORMER			KP	
▲ 26	1B	*	L01-7915-05	POWER TRANSFORMER			UMUE	
▲ S1	1B		S40-1094-05	PUSH SWITCH (POWER TYPE)				
POWER SUPPLY UNIT (X00-239X-XX) 1-01 : K,P 0-81 : U,M,UE 2-71 : X								
▲ C1			C91-0023-05	CERAMIC 0.01UF	AC250V		UMUE	
▲ C1			C91-0647-05	CERAMIC 0.01UF	P		KPX	
▲ 30	1C	*	E03-0077-05	AC OUTLET			UMUE	
▲ 30	1C	*	E03-0078-05	AC OUTLET			KP	
38	1B		J13-0041-05	FUSE CLIP			KPUMUE	
38	1B		J13-0054-05	FUSE CLIP			X	
-			J61-0307-05	WIRE BAND			X	
▲ S1	2B		S31-2083-05	SLIDE SWITCH (POWER TYPE)			UMUE	
POWER AMPLIFIER UNIT (X07-2270-XX) 0-10 : K,P 0-21 : U,M,UE,X								
D21 -34	2B	*	B30-0431-05	LED(LN21CPH)	METER			
PL1 ,2	2B	*	B30-1140-05	LAMP	(12V,0.1A)			

E: Scandinavia & Europe K: USA P: Canada W:

U: PX (Far East, Hawaii) T: England M: Other Areas

IE : AAFFES/Europe X: Australia

SE : AAES(Europe) A. Australia

⚠ indicates safety critical components

PARTS LIST

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Parts without Parts No. are not supplied.

Les articles non mentionnes dans le Parts No. ne sont pas fournis.

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Ref. No. 参照番号	Address 位 置	New Parts 新	Parts No. 部品番号	Description 部品名 / 規格				Desti- nation 仕 向	Re- marks 備考
C1 ,2			CE04KW1V4R7M	ELECTRO	4.7UF	35WV			
C3 ,4			CE04KW1A101M	ELECTRO	1000UF	10WV			
C5 ,6			CC45FSL1H221J	CERAMIC	220PF	J			
C7 ,8			CF92FV1H223J	MF	0.022UF	J			
C9 ,10			CC45FSL1H470J	CERAMIC	47PF	J			
C11 ,12			CC45FSL1H040C	CERAMIC	4.0PF	C			
C13 ,14			CF92FV1H102J	MF	1000PF	J			
C15 ,16		*	CE04KW1H330M	ELECTRO	33UF	50WV			
C17 ,18			C90-1318-05	ELECTRO	7500UF	80WV			
C19 ,20			CE04KW1E101M	ELECTRO	100UF	25WV			
C21		*	CE04KW2A220M	ELECTRO	22UF	100WV			
C22			CE04KW1V221M	ELECTRO	220UF	35WV			
C23 ,24			CF92FV1H153J	MF	0.015UF	J			
C25 ,26			CK45FE2H103P	CERAMIC	0.010UF	P			
C27			CE04KW1C220M	ELECTRO	22UF	16WV			
C28		*	C90-1334-05	NP-ELEC	47UF	10WV			
C29			CE04KW1V4R7M	ELECTRO	4.7UF	35WV			
C30			CE04KW1C330M	ELECTRO	33UF	16WV			
C31			CF92FV1H223J	MF	0.022UF	J			
C32			CC45FSL1H271J	CERAMIC	270PF	J			
C33 ,34			CE04KW1V470M	ELECTRO	47UF	35WV			
C35 ,36			CE04KW1HR22M	ELECTRO	0.22UF	50WV			
C37 ,38			CE04KW1H010M	ELECTRO	1.0UF	50WV			
C39 ,40			CC45FSL1H080D	CERAMIC	8.0PF	D			
C41			CE04KW1H100M	ELECTRO	10UF	50WV			
C42 ,43			CK45FF1H103Z	CERAMIC	0.010UF	Z			
42	1C		E23-0125-05	TERMINAL					
E1	1C		E13-0229-05	PHONE JACK(2P)	INPUT				
E3	1A		E11-0162-05	PHONE JACK(3P)					
E4	1C		E20-0823-05	LOCK TERMINAL	BOARD(8P)SPKRS				
L1 ,2			L39-0085-05	PHASE-COMPENSATION COIL					
F	1B,1C		N09-1202-05	TAPPING SCREW (Ø3X14)					
G	1B,1C		N09-0333-05	TAPPING SCREW (Ø3X12)					
CP1 ,2			R90-0187-05	MULTI-COMP	0.22X2	K	5W		
R19 ,20			RD14AB2E621J	FL-PR00F RD	620	J	1/4W		
R25 ,26			RD14AB2E102J	FL-PR00F RD	1.0K	J	1/4W		
R27 ,28			RD14AB2E132J	FL-PR00F RD	1.3K	J	1/4W		
R29 ,30			RD14AB2E182J	FL-PR00F RD	1.8K	J	1/4W		
R31 ,32		*	RD14AB2E822J	FL-PR00F RD	8.2K	J	1/4W		
R33 ,34			RD14AB2E912J	FL-PR00F RD	9.1K	J	1/4W		
R35 ,38			RD14AB2E100J	FL-PR00F RD	10	J	1/4W		
R39 ,42			RD14AB2E221J	FL-PR00F RD	220	J	1/4W		
R43 ,46			RD14AB2E2R2J	FL-PR00F RD	2.2	J	1/4W		
R65			RS14DB3D100J	FL-PR00F RS	10	J	2W		
R66			RS14KB3D100J	FL-PR00F RS	10	J	2W		
R74			RS14DB3D121J	FL-PR00F RS	120	J	2W		
R75			RS14KB3A100J	FL-PR00F RS	10	J	1W		
R76			RS14DB3A100J	FL-PR00F RS	10	J	1W		
R77 ,78		*	RS14DB3D561J	FL-PR00F RS	560	J	2W		
R79 ,80			RS14DB3D472J	FL-PR00F RS	4.7K	J	2W		
RB1			RD14GB2E100J	FL-PR00F RD	10	J	1/4W		
VR1 ,2			R12-1066-05	TRIMMING POT. (1K) IDLE					

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K1	2B		S51-2078-05	MAGNETIC RELAY		
S1	2B		S40-2323-05	PUSH SWITCH (METER RANGE)		
S2	1B		S42-2138-05	MULTIPLE PUSH SWITCH(SPEAKERS)		
S3	1B	*	S31-2113-05	SLIDE SWITCH (SPKR IMP SEL)	UMUEX	
D1 ,2			1SS133	DIODE		
D3 -12			1SS131	DIODE		
D13			D5FB20*1	DIODE		
D14 -17			DSM1A1	DIODE		
D18 ,19		*	HZS18N(B)	ZENER DIODE		
D18 ,19		*	RD18ES(B)	ZENER DIODE		
D20		*	HZS24N(B)	ZENER DIODE		
D20		*	RD24ES(B)	ZENER DIODE		
IC1			UPC1237HA	IC(POWER AMP)		
Q1 -4			2SC1845(F,E)	TRANSISTOR		
Q5 -8			2SC945(A)(Q,P)	TRANSISTOR		
Q9 ,10			2SA733(A)(Q,P)	TRANSISTOR		
Q11 ,12			2SA1123(Q,R,S)	TRANSISTOR		
Q13 ,14			2SC3419(Y)	TRANSISTOR		
Q15 ,16		*	2SC3944(Q,R)	TRANSISTOR		
Q17 ,18		*	2SA1535(Q,R)	TRANSISTOR		
Q19 ,20		*	2SC2921LB	TRANSISTOR		
Q21 ,22		*	2SA1215LB	TRANSISTOR		
Q23			2SC945(A)(Q,P)	TRANSISTOR		
Q24			2SC945(A)(Q,P)	TRANSISTOR		
Q25 ,26			2SA733(A)(Q,P)	TRANSISTOR		
Q27			2SA733(A)(Q,P)	TRANSISTOR		
Q28			2SA733(A)(Q,P)	TRANSISTOR		
Q29 ,30			2SC2631(Q,R,S)	TRANSISTOR		
Q31 ,32			2SD1302(S)	TRANSISTOR		
Q33			2SA992(F,E)	TRANSISTOR		
Q34			2SC2590(Q,R)	TRANSISTOR		
Q35			2SC945(A)(Q,P)	TRANSISTOR		
Q36			2SA733(A)(Q,P)	TRANSISTOR		
Q37 ,38		*	2SC2021F(R,S)	TRANSISTOR		
Q39 ,40		*	2SA937F(R,S)	TRANSISTOR		

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Note : Specifications is written on page 4.

Note :

Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.A. (K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.